

Destroyers Fail To Find Trace Of Lost NC-3

Continued from preceding page

missing; boat floating high; no serious damage apparent. Fairfax will tow to Horta as soon as practicable, depending on state of sea. The cable was sent at 8 a. m. and was signed by Admiral Jackson.

"Received 4:15 p. m. from Rear Admiral Jackson at Ponta Delgada. Present weather conditions westerly gale, sky overcast, visibility eight miles, sea rough. Forecast continues strong southwesterly or westerly winds to-day, becoming westerly to northwesterly and diminishing in velocity Sunday night or early Monday morning. 1308 (9 a. m., New York time)."

"Received at 4:17 p. m. from Admiral Jackson. All available destroyers, joining scouting line north from Corvo, heading westward. U. S. S. Columbia greeting the scouting line. Texas and Florida have been ordered to join in search for NC-3. 1250 (8:30 New York time)."

NC's Designed To Bomb U-Boats

Transatlantic Planes Suggested in 1917 by Admiral Taylor

WASHINGTON, May 18.—American naval seaplanes, which have undertaken the first flight across the Atlantic Ocean, were built especially for bombing German submarines, and in initiating their design, Rear Admiral David W. Taylor, chief of the bureau of construction and repair, had in mind the construction of ships capable of flying across the ocean, so as to avoid difficulties of delivery during the war.

This was disclosed to-day by the Navy Department, which made public the following memorandum sent by Admiral Taylor on August 25, 1917, to Naval Constructor W. C. Westervelt, his assistant for aeronautics.

"The United States motor gives good promise of being a success, and if we can push ahead on the airplane end it seems to me the submarine menace could be abated, even if not destroyed, from the air."

"The ideal solution would be big flying boats or the equivalent that would be able to keep the sea (not air) in any weather and also able to fly across the Atlantic to avoid difficulties of delivery, etc."

Admiral Taylor, after discussion of the problem with his assistants, directed the preparation of tentative plans.

Early in September, Glenn H. Curtiss, of the Curtiss Aeroplane and Motor Corporation, and his engineers, W. L. Gilmore and Henry Kleckler, came to Washington at the navy's invitation to discuss the proposed designs, and they cooperated with the navy throughout the designing and building of the ship. A three-foot model of the design made entirely to scale was tested by Dr. A. F. Zahm in the wind tunnel at the Washington Navy Yard.

Construction work began in October and commander H. C. Richardson, a naval constructor, was directed to design the hull of the boat. A series of model hulls were made up and tested by Naval Constructors McEates and Richardson in the towing basin at the Washington Navy Yard and the best of the series was adopted.

The engine plant design was the work of the Bureau of Steam Engineering and it was decided to install three Liberty motors. In December, 1917, a contract was made with the Curtiss company for building four of the boats, but separate parts of the craft were made by a number of factories. The NC-1, the first of the boats, was completed and made a successful flight on October 4, 1918.

The month of November was spent in thoroughly trying out the NC-1 and various flights were made. After making various minor changes it was apparent that the flying part of the craft could sustain a greater load, if more power were available, and it was decided to add a fourth engine.

The second boat was completed in March, 1919, and successfully flew with a total weight of 28,000 pounds. The NC-2 and NC-3 were completed last month. It had been intended to fly all four boats across the Atlantic, but an accident to the NC-1 led to the decision to place the wings of the NC-3 on her, and thus only three vessels were left available for the start of the flight.

Pan-American Aero Convention Praises Navy for Sea Flight

ATLANTIC CITY, N. J., May 18.—A resolution congratulating the Navy Department and those who had a hand in the transatlantic flight of the navy's seaplanes was adopted at to-night's session of the Second Pan-American Aeronautic Convention. The resolution says:

"Whereas, the members of the Pan-American Aeronautic Convention have with applause the decision to bridge by air the great span between the Old World and the New and have viewed with admiration each step conceived and executed;

"Resolved, that we, in formal convention assembled, hereby tender our most hearty congratulations to the Secretary of the United States Navy and those of his department whose cooperation has secured for this hemisphere such a proud moment of peaceful triumph, and to the crews whose endurance and daring have made their country pioneers in such courageous aeronautic achievement."

Raynham Mishap Blow to Hawker

Zest of Sea Race Marred When Briton Is Forced to Make Flight Alone

By Harry E. Tudor
Director, the Air Pilots' Bureau
Knowing both Hawker and Raynham through active association with British aviation enterprises prior to the war, I can say that each regarded their pro-

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posed competitive flight across the Atlantic as an aeronautic duel, pure and simple.

The best of friends personally, they both regarded winning the transatlantic pennant as part of the day's

COMMANDER MACKENZIE GRIEVE



Navigator of the Sopwith 'plane which flew for Ireland yesterday.

work in connection with their duties as employees of the Sopwith and Martin and Handyside firms. They have been well aware that success on the part of either would be merely a "sporting win," and that the Americans, through their elaborately prepared flight, would be regarded as the actual pioneers of air travel across the Atlantic.

Flight Their Life Ambition

Both Hawker and Raynham have told me at different times that a successful flight between America and Great Britain was their life ambition. In 1913 Hawker was the sole survivor of the seaplane race around Britain. It was sheer determination under the disadvantage of a disabled arm and bodily exhaustion that brought him through.

On being complimented on his pluck he replied that he would want more than he had already shown when he could get a machine capable of crossing "the pond." Following this event Hawker returned to Australia and became identified with aeronautical progress in that country, breaking several altitude records.

Raynham's principal, cross-water exploit was his flight in an Avro hydro-aeroplane to Heligoland—one of the tests that Germany demanded be filled before she purchased the machine. This was in 1912, and although the long talk of German invasion seemed as far distant as ever Raynham afterward expressed regret that the Avro had not failed in the test and so balked Germany's desire to learn the design and principles of the machine.

Race Marred by Mishap

After the weeks of weary delay culminating in yesterday's jump off, I believe Hawker is no less disappointed than Raynham at the latter's mishap. Neither of them cares for the plaudits of a solo accomplishment where the zest of the contest has been marred.

So far as Great Britain is concerned the congratulations of the entire nation will be most sincerely accorded the commanders and crews and designers of the NCs. As a matter of fact, every aeronautical enthusiast in the world has hoped that the United States would attain distinction in aerial effort. The backwardness of this country heretofore has not been the fault of American aircraft designers or aviators or would-be flying men.

The accomplishment of the transatlantic flight by American flying craft



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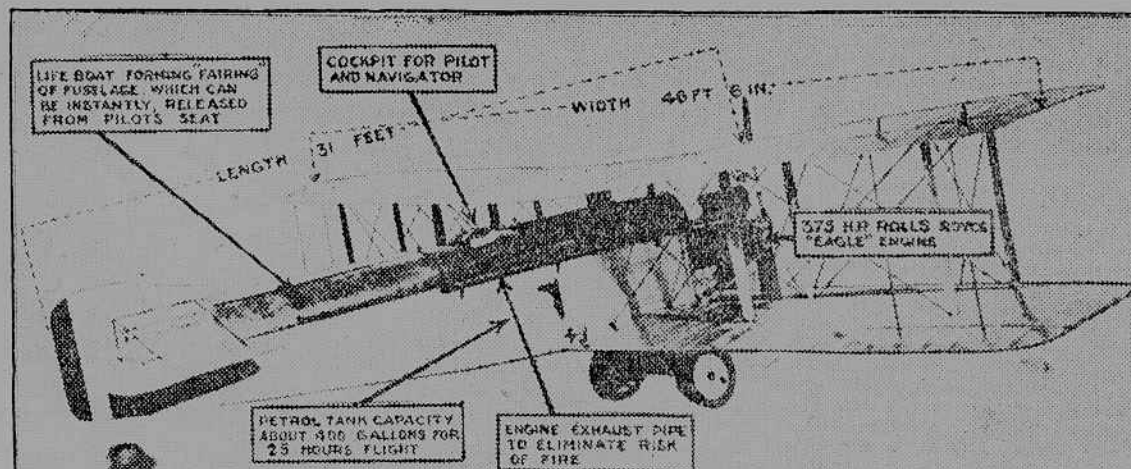
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Chronology of Conquest of Air

Important events in the history of heavier-than-air machines are, briefly, as follows:

- 1500—Baptiste Dante made glider flights near Lake Trasimene, Italy.
- 1500—Leonardo da Vinci sketched a parachute, an ornithopter and a helicopter.
- 1742—Marquis de Bacqueville, using imitation flapping wings, flew from his house on the Seine to Garden of Tuilleries.
- 1781—Karl Meerwein, of Baden, computed the area of a spindle-shaped man-supporting surface, from proportions of bird weight and wing surface. These figures were later substantiated by Lillenthal. Aviator was fastened to the middle of the under surface, holding a rod which operated the wings. One attempt by Meerwein was unsuccessful.
- 1809—Sir George Cayley built a glider of 300-foot wing surface which skimmed the ground and sailed from hillsides.
- 1842—Hanson patented a monoplane to be driven by a steam engine. It had a wing span of 140 feet.
- 1855—Captain Le Bris made a partially successful flight with his glider.
- 1871—M. A. Penaud built a toy model which flew 131 feet in the Garden of the Tuilleries.
- 1877—William Kress made a model fitted with two propellers and double control.
- 1890—Clement Adler, near Gutz, France, experimented with a monoplane driven by a forty-horse-power motor.
- 1891—Lillenthal began experimental flights with monoplane gliders near Berlin.
- 1893—Horatio Phillips constructed a multiplane aeroplane, with wings superimposed, after the principle of Wenham. It was equipped with a 5.5 horse-power motor and one propeller.
- 1894—Sir Hiram Maxim built a three-man carrying machine with propellers operated by a 360-horse-power engine. Total weight 5,000 pounds. Machine was wrecked.
- 1895—Percy S. Pilcher built monoplane gliders which operated successfully.
- 1896—Professor S. P. Langley's steam-driven toy monoplane model flew over the Potomac successfully for over 3,000 feet, at from twenty to twenty-five miles an hour.
- 1900—Wilbur and Orville Wright experimented with gliders with arched surfaces and adjustable rudder in front.
- 1903—Wright brothers' machine, weighing 760 pounds, flew at speed of thirty to thirty-five miles per hour for period of twelve seconds.
- 1905—Wright brothers flew for a distance of twenty-four miles in thirty-eight minutes.
- 1906—Santos-Dumont made the first officially recorded European flight, leaving the ground for a distance of thirty-six feet at the rate of twenty-three miles per hour. In another flight he remained in the air twenty-one seconds and flew a distance of 700 feet, winning prize offered by French Aero Club.
- 1907—Delagrangé demonstrated a Voisin biplane, and Henry Farman, an Englishman, flew a Voisin over 2,500 feet in 52.5 seconds in a straight line.
- 1908—Henry Farman made a complete circuit of about a mile in one and one-half minutes. Delagrangé flew at Milan in a Voisin machine, covering a distance of ten and one-half miles in sixteen minutes. Glenn H. Curtiss flew his June Bug at the rate of thirty-nine miles per hour. Henry Farman remained in air for 21.5 minutes, flying three-quarters of a mile and carrying a passenger. Orville Wright made official flights at the Camp of Auvours, surpassing French records for duration, distance and height. Later he made a flight of one hour's duration, followed by one of one hour and thirty-one minutes' duration, covering forty-two miles. He also made another flight of one hour's duration with passenger. Farman made first 'cross-country flight from Châlons to Rheims, a distance of sixteen miles, in twenty minutes. The first

THE SOPWITH BIPLANE



Detail of Harry G. Hawker's machine, which yesterday flew from Newfoundland for Ireland.

and American crews will supply the necessary impetus to commercial aviation throughout the United States. There are to-day thousands of experienced air service men anxious to stay in the game, even to their financial disadvantage. I anticipate an immediate boom that will solve the problems of many of them.

NC-3 Able to Signal On Ten-Mile Circuit

Coupling Wireless With "Skid Fin" the Only Trick That Is Left Them to Summon Aid

There is one way in which Lieutenant Commander R. A. Lavender, radio operator of the missing seaplane NC-3, can communicate with the destroyers searching for him, despite the fact that

the surface sending set was discarded at Trepassey, N. F., before the machine started for the Azores.

He can couple up the wireless telephone set with which the seaplane is equipped to the "skid fin" aerial stretched between the two fins on the extreme edges of the upper wings of the seaplane. In this manner he would be able to talk by word of mouth over an approximate distance of about ten miles, which if persistently kept up might be caught by one of the searching destroyers.

By inserting a sending key in the place of the telephone transmitter he would be able to use the set as a wireless telegraph sending apparatus, in which case the range would be extended by four or five miles. The only difficulty in this case would be due to the fact that he would be sending on "undamped" waves which the destroyers are not especially equipped to receive. There is no reason, however, why the operators of the destroyers

should not connect up their receiving instruments in such manner as to receive the "undamped" signals.

American Flying Club Gets All Flight News

New Wireless Service Only One of Numerous Features to Interest Aviator Members

Up on the roof of the American Flying Club, at 11 East Thirty-eighth Street, a brand new radio outfit sputtered and sparked. It was picking up the latest news from the transatlantic fliers as they beat their way onward through the Azores fogs.

Below in the clubrooms, while the crowds in the streets pressed close around newspaper bulletin boards, a little knot of United States army aviators

great aeronautical salon held in Paris, more than a dozen full-sized machines, being exhibited. Orville Wright made flight of two hours and nineteen minutes' duration, with passenger.

1909—Captain Spelterini, an Italian officer, explored the Alps in neighborhood of Mont Blanc. Latham, in trial miles over the Channel, fell into the sea seven miles from shore. Blieriot crossed the Channel from Calais to Dover in thirty-seven minutes. Glenn H. Curtiss won the James Gordon Bennett Cup in an international speed race at Rheims. Attained a speed of forty-three miles per hour in Curtiss machine. Seven aeroplanes were in air. Wilbur Wright flew around the Statue of Liberty in New York Harbor. Henry Farman broke the world's record for distance, covering 145 miles in four hours, eighteen minutes and fifty-three seconds. Paulhan broke the world's record for altitude, attaining a height of 970 feet.

1910—Latham set the world's record for altitude, climbing 3,281 feet in a flight of forty-two minutes eleven and two-fifths seconds. Paulhan surpassed Latham by climbing 4,163 feet. Demonstrated bombing from aeroplane. Sommer established the world's record in flight with three passengers, covering 4.3 miles. Curtiss made Albany-Governor's Island flight of 195.4 miles in two hours and thirty-two minutes. It was the first flight in which a river was used as a guide in aerial high way. Latham surpassed Paulhan in altitude flight, attaining 4,541 feet at Rheims. Curtiss, leaving Atlantic City, flew over sea for a distance of 49.6 miles in one hour and fifteen minutes at height of 1,600 feet. McCurdy received and sent wireless messages from an aeroplane at Sheepshead Bay. Drexel, at Lanark, raised the world's record for altitude to 6,604 feet. Leblanc flew one mile in fifty-three seconds, breaking speed record. Legagneux set altitude record for the year at 19,171 feet at Pau. Labuteaux set distance record for the year of 362 miles at Buc.

1911—Curtiss successfully rose from water, making a sustained and controlled flight after experiments extending over several years. Eugene Ely alighted on and flew from the deck of a battleship at San Francisco. McCurdy flew from Key West to shore off Havana, a distance of ninety-nine miles, in two hours. Lincoln Beachey flew over Niagara Falls and through the Gorge. C. T. Weyman flew a Nieuport monoplane at eighty miles per hour. Prior flew from London to Paris, 200 miles, without a stop.

1912—Powell flew across continent from Jacksonville, Fla., to San Francisco, 2,232 miles, thus making the first transcontinental flight. Lieutenant Andrzejewski flew from Sebastopol to Odessa and Petrograd, covering 1,880 miles in twenty-seven days. Lieutenant Lyubovskiy flew from Sebastopol direct to Petrograd, a distance of 1,612 miles, in thirty days. Garros set altitude for year of 18,480 feet at Tunis. Jules Vedrines won the James Gordon Bennett Cup, flying a 100 horse-power Deperdussin monoplane at 105 miles per hour.

1913—Belloc, flying a Hauriot, crossed the Alps. Perreyon set altitude record for year of 19,270 feet. Prevost established speed record of 126.59 miles per hour. Robert Fowler flew across Isthmus of Panama. Brindejonc flew from Paris to Warsaw, stopping at Berlin, a distance of 833 miles in eleven hours. Verplank and Haven made an all-water trip from Chicago to Detroit, following the line of the Great Lakes. Distance, 880 miles. Pegoud made the first voluntary loop-the-loop, in a Blieriot monoplane. Sopwith produced the first small, high-speed biplane of the "scout" class, with a speed of ninety-two miles per hour.

1914—Trials of the America, a Curtiss flying boat, built to fly across the Atlantic.

1916—Curtiss tri-plane flying boat made successful trial flights in England.

1914-1918—Aviation developed to its highest degree, with many new commercial and battle models produced.

1919—American NC seaplanes make successful 'cross-ocean flight.

sat at their ease getting the freshest details of the big feat toward which the eyes of the world were turned.

That is a sample of the sort of service the latest aviation club in America is going to render its members. It is a sample, too, of the sort of service that the club purposes to pass on to the public as soon as its machinery is fully operating.

"Our object," said Lieutenant John P. Cahen, special representative of the

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club, just back from overseas service, "is to see to it that aviation remains a live thing to every man, woman and child in the country."

It is equally, or perhaps even more, their object to see to it that every American aviator is provided with a rendezvous of a sort which, they declare, never before has been possible. "First of all," said Lieutenant Cahen, "our organization is an army organization. The government and the United States army are actively behind it. Major General Charles T. Menoher, head of the aviation section, is our honorary president. Major General Leonard Wood is our honorary vice-president. Practically every American flyer you ever heard of is a member. Every American flyer you're ever going to hear of is going to be. And American flyers are first, last and all the time to be made to realize that it is their club and no one else's, to be run as they wish."

Nine weeks ago the new organization moved into its present quarters on Thirty-eighth Street. The actual beginning, though, was made just a year ago on the flying fields of Flanders. Credit for that beginning is given by the boys primarily to Laurence L. Briggs, the magazine writer.

Louis Blieriot, Channel Flier, Says Americans Make His Feet Small

PARIS, May 18.—All the newspapers pay warm tribute to the feat of the American seaplanes in flying across the Atlantic from Newfoundland to the Azores, and say that May 17 marks one of the great events in the history of the world.

Louis Blieriot, in the "Excelsior," recalls his flight across the English Channel ten years ago. He said his flight at that time was deemed an extraordinary performance, but it was insignificant compared with the brilliant exploit of the American naval officers. He declares that none better than he is able to appreciate their prowess, and says he is glad to see the Americans succeed, although French aviators showed the way.

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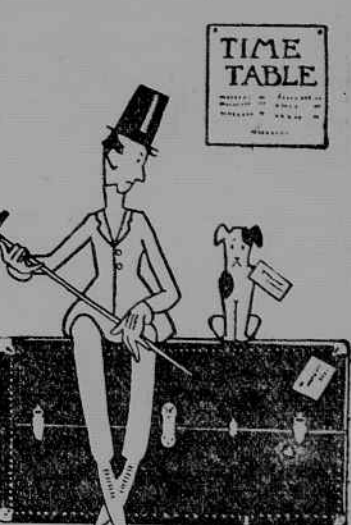
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